

Socioeconomic Status and Coronary Heart Disease- A Tertiary Center Study

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Abstract:

1. Introduction

Socioeconomic inequalities in health can be defined as systematic differences in the prevalence or incidence of health problems between the people of higher and lower socioeconomic status distinguished by level of education, occupational class, or income [1]. There is a pronounced socioeconomic gradient in coronary heart disease, with greater morbidity and mortality among people of lower socioeconomic status (SES) as defined by occupational position, education and income [2].

Death due to cardiovascular disease (CVD) has significantly increased in developing countries. According to World Health Organization, 41% of all deaths in 2014 owned to this problem [3]. Understanding social and economic indicators including income, education, employment, and social class play an undoubted role in improving health and quality of life. Socioeconomic status (SES) has been shown to be associated with health problems in general and non-communicable diseases such as diabetes, hypertension, hyperlipidaemia and coronary artery disease (CAD) in particular [4-6].

In fact, the most important factor affecting the health of communities is related to social and economic elements. Vulnerable people who have less access to health and social facilities get sicker and die earlier than people in more fortunate social condition [7].

Since last 40 years, a majority of studies in developed countries have shown a reliable inverse relationship between cardiovascular diseases with many of socioeconomic status which may act as an independent risk factors [8]. However, the results of other studies from developing countries indicated that the prevalence of cardiovascular disease is more common among middle and above socioeconomic groups as compared to low socioeconomic groups [9-13]. Therefore, there is apparently a paradox in the impact of socioeconomic indicators between developed and developing countries.

Although CAD is a leading cause of mortality, morbidity, and disability with high cost of health care in the world [14], there have been little studies in relation to SES and cardiovascular diseases.

The present study was carried out to describe demographic and socioeconomic characteristics and their association to

CAD and to explore and analyze the current SES status of CHD patients in Trivandrum medical college, Kerala.

2. Materials and Methods

2.1 Sampling and participants

All patients (n=300) who were candidates for angiography and admitted on september 2016 to the cardiology department of a tertiary referral hospital for cardiac patients (Trivandrum medical college) were considered. Those patients who were suffering from congenital heart disease or complications other than CHD were excluded.

2.2 Materials

A semi-structured questionnaire with 15 questions was used to collect data. Face validity of the applied questionnaire was checked by a panel of experts and after several amendments they approved the final version.

2.3 Data analysis

Descriptive statistics were used to describe the basic SES features of the CHD patients. Data analysis was done using SPSS ver. 16. The study data were coded and entered to a personal computer twice by two independent coders to verify the data quality.

The hazards or difficulties that might arise for the participants in relation to facilities and safety, full understanding of the study aim, and description of study procedures were main ethical considerations. All attempts were performed to minimise probability of any harm to the study participants through cooperation with the study. The study respondents' informed consent was obtained after explanation of the study aims and procedures. In addition, their right to withdraw from investigation and confidentiality of the study data were addressed. Therefore the interviewees were aware of their right to request the researcher to stop the interview at any time, and withdraw from the study without having to give a reason.

3. Results

Demographic characteristics of the sample

In this section, the characteristics of the 300 respondents including gender, age, insurance and socioeconomic status is described. As can be seen from [Table 1](#), 65 per cent of

participants were male. As for their age distribution, 6 (2%) were aged 30-40 years, 39 (13%) aged 41-50 years, 116 (38.7%) aged 51-60 years, and 139 (46.3%) aged 61 or more years. Ninety per cent of those interviewed (n=271) reported their marital status as married and 22% widowed.

Table 1

Socio: Demographic characteristics of participants (n=300)

Characteristic		Frequency and percentage No. (%)
Gender		
Women		105 (35)
Men		195 (65)
Age group (Yr)		
30-40		6 (2)
41-50		39 (13)
51-60		116 (38.7)
61>		139 (46.3)
Marital status		
Married		271 (90)
Widowed		29 (10)
Living arrangement		
Alone		10 (3.3)
With spouse/another person		290 (96.7)
Living areas		
Province		136(45.3)
Urban		104(34.7)
Rural		60 (20)
Insurance coverage		
Medical services insurance		44 (14.7)
Social security		181(60.3)
Military services		11 (3.7)
Rural insurance		21 (7)
Self employed		9 (3)
Other		8 (2.7)
No insurance		26 (8.7)
Family size		
Large (More than four people)		98 (32.7)
Profession		
Housekeeper		44(14.7)
Retired		58(19.3)
Self-employed/office work		33 (11)
Manual labourer		125 (41.7)
Unemployed		40(13.3)
Income level		
Low		202 (67.3)
Middle		82 (27.3)
High		16 (5.3)
Educational level		
Illiterate	Women	0(0)
	Men	0(0)
Primary/secondary	Women	32 (30.5)
	Men	85 (43.6)
College	Women	73 (69.5)
	Men	110 (56.4)

Furthermore, amongst the majority of participants the place of life was different from the place of birth. Forty-five per cent of the respondents (n=136) lived in a province environment, followed by urban (n=104, 34.7%), and rural locations (n=60, 20%).

Regarding health care insurance coverage, 60 per cent of participants were supported by social security schemes, followed by medical health insurance (14.7%),no insurance

(8.7%) rural insurance (7%), military service insurance (3.7)self employed (3%) and other (2.7%).

Concerning living arrangement, 3.3 per cent of the participants (n=10) were living alone and 96.7 per cent (n=290) with spouse/ another person. Based on the number of family members, 32.7 per cent of respondents (n=98) reported a large family size (more than four people).

The most common professions were manual labourer (41.7%, n=125) and retired (19.3%, n=58) while around thirteen per cent of participants were unemployed. Eleven per cent of those interviewed (n=33) had official/self employed positions. Interestingly, a good percentage among them were much more likely to be self-employed with jobs as carpet weaving, selling, and other small scale businesses like running a tea shop. Income, defined as the earnings in 2016, was recorded as one of 3 categories. Approximately two third of the participants were classified as having a low income (<90,000 INR annually), followed by 27.3per cent (n=82) were categorised in middle income level (90,000-100000INR annually) and five per cent (n=16) in high income level (>100000INR annually).

Among women, none were illiterate, 30.5 per cent possessed no academic qualifications and 69.5 per cent were on the college graduate level. Then again, none of the men were illiterate, 43.6 percent were ranged from primary/secondary to post secondary level and 56.4 percent graduated from a university.

4. Discussion

The aim of the present study was to describe demographic and socioeconomic characteristics and their association to the diseases and to explore the predictive risk of CHD.

Several studies in developing countries indicated that coronary risk factors may be related to SES and urbanisation [15,16]. Amongst city dwellers in India, for instance, the prevalence of obesity, diabetes, hypertension and CHD have dramatically increased [17]. Furthermore, other studies in rural areas have indicated a lower prevalence of CHD compared to urban areas, however an increasing trend is seen among them as well [18]. Similar results have been reported from developed countries, where the lower SES groups suffer higher CHD and deaths due to non-communicable diseases [16]. These patterns may be related to enormous changes in dietary customs and living styles due to rapid industrialisation and urbanisation. In addition, increased awareness and education about risk factors in daily life activities may have been partly responsible for the decline in CHD prevalence among the higher social classes [19]. All these findings support the results of our study which revealed that most of patients were male, aged 51-60 yr or over, with a good percentage educated not beyond the primary/ secondary level and categorised in low/middle income level.

To halt the disease process and its consequences for patient, his/her family and also to the wider community it is suggested to better understand the SES phenomena behind the CHD in local settings. Planning intervention

programmes that are especially tailored for lower/middle social classes in developing countries may also have greater impact in prevention of CHD risks. Thus we need further information about the way people live and policy changes in our educational, economic and welfare programmes. This epidemic may be halted through the promotion of healthier lifestyles and the support of environmental and policy changes.

5. Limitations of the Study

- 1) Due to socio-cultural reasons, some personal questions e.g. level of income may have been responded incorrectly.
- 2) As patients who are candidates for angiography were investigated, the results of this study cannot be generalised to all CHD patients
- 3) Sample size could have been more and so cannot be generalized to a large population

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